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| 10/591,286 | 01/16/2007 | Philippe Pognant-Gros | 295391US2X PCT | 9097 |
| 22850 | 7590 | 08/19/2009 | | |
| OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | EXAMINER OLSEN, LIN B | |
| | | | ART UNIT 3661 | PAPER NUMBER |
| | | | NOTIFICATION DATE 08/19/2009 | DELIVERY MODE ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/591,286 | Applicant(s) POGNANT-GROS ET AL. | |
| | Examiner LIN B. OLSEN | Art Unit 3661 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 18-34 are in this application; claims 18 and 28 are independent.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statements (IDS) submitted on August 31, 2006 and September 18, 2007 were filed before the mailing date of the first action on the merits. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

The specification is objected to because the guidelines for arrangement of the specification have not been followed. Correction is required.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.

Art Unit: 3661

- (1) Field of the Invention.
- (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Objections

Claim 29 is objected to because of the following informalities: Because there is no punctuation, it is unclear whether the "established by a unit for mechanical decoupling between the heat engine and the electric machines" modifies the instruction supplement or the instruction setpoint of the electric machines.

Claims 21 -27 are objected to because of the following informality:

Claim 20 defines the second element as a being linear combination of physical quantities. However, claims 21-27 specify that the second element integrates physical quantities. An integral is not a linear combination.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 18 - 27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claims are to a process used to damp oscillating modes of an infinitely variable transmission, however, the claims do not define the steps of the process; therefore the claims encompass all ways to do the method.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18 recites the limitation "the wheels" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claims 32 and 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is suggested that the applicant recheck the dependency of these claims as Claim 32 recites the limitation "mechanical determination unit" and Claim 34 recites the limitation "mechanical regulating unit" while each of these respective units is not defined in the claims from which the subject claim depends. There is insufficient antecedent basis for these limitations in these claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims **18-34** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 7,110,867 to Imazu et al. (Imazu). Imazu describes a vibration suppression apparatus and method for a hybrid vehicle.

Regarding independent **claim 18, A method of damping oscillating modes of an infinitely variable transmission with electric variator, including a heat engine and at least two electric machines,** - Imazu Fig. 1 includes an engine 1, two electric machines MG1 and MG2 and a planetary gear mechanism 3. It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the planetary gear mechanism as described in Imazu for the infinitely variable transmission with electric variator as they accomplish the same function. A simple substitution of one known element for another yields predictable results. - **wherein a torque instruction of the electric machines is a sum of a main instruction making it possible to attain setpoints for wheel torque and torque of the heat engine,** - Imazu at col. 4 lines 13-39 discusses how the hybrid controller 26, engine controller 21 and motor controller 23 together determine the steady-state torque commands. **and of an instruction supplement intended to damp the oscillating modes brought about by stiffnesses of a kinematic chain between the heat engine and the wheels.** - Fig. 2 illustrated that the hybrid controller 26 incorporates a part 26a concerned with vibration suppression. As stated in the abstract the suppression control signals are superposed (added) onto the torque controls.

Regarding **claim 19, The method of damping as claimed in claim 18, wherein the instruction supplement depends on setpoints and on estimates of physical quantities.** - Imazu Fig. 3 illustrates the processing to determine the additional controls. Block 261 outputs calculated (estimated) translations displacement and rotational displacement. Block 263 plant model outputs goal points (setpoints) that are compared to the estimates at junctions 264 and 265.

Regarding **claim 20, The method of damping as claimed in claim 18, wherein the instruction supplement is composed of a first element which is a linear combination of the setpoints, and of a second element which is a linear combination of physical quantities.** – Examiner will ignore the linear limitation due to the claim objection to claim 20. The instruction supplement of Imazu is a linear combination (264 and 265) of setpoints (outputs of 263) and a second element derived from the torque on each element (a physical quantity).

Regarding **claim 21, The method of damping as claimed in claim 20, wherein the second element integrates an estimate of a status of the heat engine.** - Imazu Fig. 6a block S3 indicates that the displacements are integrals of the torques, where one torque is from the heat engine.

Regarding **claim 22, The method of damping as claimed in claim 20, wherein the second element integrates an estimate of a speed of the wheels.**

Regarding **claim 23, The method of damping as claimed in claim 20, wherein the second element integrates an estimate of a status of the electric machines.** - Imazu Fig. 6a block S3 indicates that the displacements are integrals of the torques, where the two torques are from the motors.

Regarding **claim 24, The method of damping as claimed in claim 20, wherein the second element integrates an estimate of engine torque exchanged between the engine and a box.** - Imazu Fig. 6a block S3 indicates that the displacements are integrals of the torques, where one torque is from the heat engine.

Claims **25 – 27** are rejected for incorporating the above errors from the parent claims by dependency.

Regarding independent **claim 28, A device for supervising a transmission ensuring regulation of torque at wheels and of thermal status of an infinitely variable transmission with electric variator, comprising:**

a heat engine;

at least two electric machines; and - , - Imazu Fig. 1 includes an engine 1, two electric machines MG1 and MG2 and a planetary gear mechanism 3 equivalent to the infinitely variable transmission with electric variator.

Art Unit: 3661

a unit for damping torsional modes, which calculates an instruction supplement intended to damp oscillating modes brought about by stiffnesses of a kinematic chain between the heat engine and the wheels. – Fig. 2 illustrated that the hybrid controller 26 incorporates a part 26a concerned with vibration suppression. As stated in the abstract the suppression control signals are superposed (added) onto the torque controls.

Regarding **claim 29, The supervising device as claimed in claim 28, wherein the damping unit provides the instruction supplement added to an instruction setpoint of the electric machines established by a unit for mechanical decoupling between the heat engine and the electric machines.** – In Imazu Fig. 3, the torque commands from the steady state machine are illustrated by TORQUE COMMAND, and the supplemental torques are added at points 269 and 279.

Regarding **claim 32, The supervising device as claimed in claim 29, wherein the mechanical determination unit establishes an estimation vector for the oscillating modes, which is intended for calculation of the instruction supplement.** - In Imazu, Fig. 3 the two inputs to the block 266 constitute an estimated vector for the vibration in the translation and rotation dimensions.

Claims 31-31 and 33-34 are rejected for incorporating the above errors from the parent claims by dependency.

Conclusion

The prior art made of record and not relied upon is listed on the attached PTO-892 and is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LIN B. OLSEN whose telephone number is (571)272-9754. The examiner can normally be reached on Mon - Fri, 8:30 -5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on 571-272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lin B Olsen/
Examiner, Art Unit 3661

/Thomas G. Black/

Supervisory Patent Examiner, Art Unit 3661